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HEALTHY AND SICK SPECIMENS OF *BRYOPHYLLUM CALYCINUM*

Those who have worked with *Bryophyllum calycinum*, WALKER, DE VRIES, GOEBEL, the writer, and probably many others, have all noticed that the leaves of *Bryophyllum* which form shoots when isolated will rarely or never do so when in connection with a normal and healthy plant. Miss E. L. BRAUN¹ makes the following statement:

Pot-grown plants of *B. calycinum* in the writer's possession have frequently grown both shoots and roots from leaf notches while the leaves were in connection with the plant. Early in the spring of 1917 a large plant of *Bryophyllum* began to produce shoots from the leaves more abundantly than the plants often do. The accompanying photographs were taken May 12, when shoot production had reached its maximum. It was not necessary to induce the notches to grow; they grew freely under ordinary room conditions, and with only the usual attention which a pot plant in a residence receives.

A number of the leaves of the plant produced shoots from all the notches or from all except the basal notches, a phenomenon which, to accord with LOEB's theories, should take place only under very special conditions. The plant appears to be a "healthy plant," as healthy and vigorous a plant as the writer has ever seen. Whether or not it is a "normal plant," as a normal plant is conceived of by LOEB, is difficult to say, for nowhere does he define a "normal plant." He does state: "If, however, the flow of substances in a plant is abnormal, either because the roots or the apical parts or both have suffered, a growth of shoots may occur in moist air from the notches of leaves which are in contact with the plant." There is no indication that either the roots or the apical parts have suffered; the plant appears healthy, and has had no accident.

A glance at the photograph accompanying Miss BRAUN's statement will show to those familiar with "normal" *Bryophyllum* that the plant observed and photographed by Miss BRAUN was a sick specimen. The normal stem of *Bryophyllum calycinum* is perfectly straight and vertical (and unbranched). The specimen observed by Miss BRAUN has not a single straight stem. Stems so weak as not to be able to grow vertically upward are certainly abnormal in regard to nutrition. The bend in the stems acts like a partial block to normal circulation. Such sickly bent stems behave to all purposes like isolated pieces of stems whose leaves will in time give rise to shoots.—JACQUES LOEB, *Rockefeller Institute for Medical Research, New York City*.

¹ BOT. GAZ. 65: 191. 1918.